THE UNIVERSITY OF ALBERTA

MARKET SEGMENTATION FOR THE BEEF INDUSTRY

by

© Wayne Thomas Roy McLean

A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Market Segmentation for The Beef Industry, submitted by Wayne Thomas Roy McLean in partial fulfilment of the requirements for the degree of Masters in Business Administration.

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ABSTRACT

The literature review revealed that market segmentation for media selection for an industry such as the beef industry in Western Canada can be carried out if segments are defined using demographic, socioeconomic, product usage, or media descriptor variables.

A total of 461 questionnaires were completed in Edmonton by personal interview. The survey sought information regarding demographics, household composition, and product and media use.

The survey revealed that the female head of the household should be the target of promotional communications since she had the responsibility for deciding which products were to be purchased. Plausible segment groups were defined and variances in responses to questions were analyzed between groups. Segments were defined on the basis of socioeconomic status, income, occupation and household size. Differences in beef product consumption between segments were found. Very few specific media differences were noted between segments.

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CHAPTER I INTRODUCTION

This study is an investigation of the beef industry's market segments in Alberta for purposes of media selection. The orientation of the study is such that the results could be combined with known attitudes toward beef products which provide the basis for a comprehensive promotion and consumer education program for the beef industry in Western Canada.[1]

A. JUSTIFICATION FOR THE STUDY

The need for a comprehensive promotion campaign for the beef industry may not appear to be obvious. However, changing market conditions and recent research in this area have established a definite need for beef promotion.

Rapid population growth and large increases in disposable income have supported the growth of domestic demand for beef in the post-war period. During this growth period, other meats have not been strong competitors and beef consumption has increased so that it accounts for approximately one half of the total red meat consumed in

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[1] McFadyen, Sheila C., "Consumer Attitudes Toward Beef", Unpublished MSc Thesis, University of Alberta, Fall, 1972.

Canada.[1] The beef industry is unlikely to encounter another period in which so many factors, favorable to an increased demand for beef, will occur.[2] In recent years, the competition between beef and other meats has become more intense. A steady increase in the per capita consumption of poultry, combined with recent sharp increases in pork consumption indicates that the preferential position held by beef (in terms of per capita consumption) is being threatened. Although "other meats" (pork, lamb, poultry,) are not considered to be direct substitutes for many beef products, with changing attitudes towards food consumption these products could provide very effective competition. At the same time that competition between meats is increasing, the food processing industry is manufacturing meat analogs from vegetable proteins. It appears that these analogs have not provided strong competition for fresh meats because of their relatively poor consumer acceptance. Nevertheless, with consumer concern about the role of animal fats in the diet, these meat analogs represent a potential threat to the meat industry.[3]

Recent rises in consumer price indices, in particular the consumer price index for food products, has caused much

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[1] Canada Packers Limited, 45th Annual Report, March 25, Toronto, p.26.

[2] Williams, W. F., and T. T. Stout. 1964. Economics of the Livestock-Meat Industry. The Macmillan Co., New York.

[3] McPadyen, Sheila C. & Michael E. Stiles, "Consumer Attitudes Toward Beef - Implications for the Beef Industry", Alberta Cattle Commission, October, 1972, p.8.

concern and has gained much publicity. Consumers generally feel that higher food costs are mainly accounted for by the rising price of meats. Reactions to the high cost of living have taken the form of price freezes for red meats in the United States[1], meat boycotts both in Canada and the United States, and an intensive effort by Consumers in general to learn to live with smaller quantities of meat.[2] The food industry is also reacting to high food prices. The industry is being forced to turn to new technology in an attempt to control the continent's grocery bill. Lower-priced vegetable protein is being added to or substituted for a variety of food products. Textured soy bean protein is the most successful product being used as a meat extender or meat substitute. In regard to the market in the United States, Dr. Herbert Stone, Stanford Research Institute's Food and Plant Sciences Director believes that "today's meat shortage will extend at least through 1985 and that this prospect is spurring food companies to create products on their own".[3]

Although the beef industry's present competitive position is fairly strong (in terms of per capita consumption) the industry is facing a period where beef products may either be partially substituted for or replaced completely with new products. This situation clearly calls

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[1] Business Week, "Tougher But More Selective Controls", Business Week , June 23, 1973, pp. 22-28.
[2] Business Week, "Making It Cheaper to Eat Protein", Business Week , May 12, 1973, p. 184.
[3] Business Week, "Making It Cheaper to Eat Protein", p. 184.

for a program in which the beef industry is able to reach consumers in order to maintain and strengthen the domestic demand for beef. This research was in part designed to serve this purpose.

Recent research by McFadyen and Stiles on consumer attitudes toward beef indicates that consumers have many misconceptions regarding beef products.[1] These misconceptions have led to consumers developing attitudes towards certain beef products that tend to limit their use and acceptance. In recommendations made to the beef indusrty, McFadyen and Stiles have recommended extensive programs of consumer education to:

1. Improve consumer satisfaction by promotion of beef cuts to the consumer primarily through the supermarket
2. Provide information to consumers through the media by supplying information to media and teaching personnel.

In order to correct the misconceptions and unfavorable attitudes documented by McFadyen and Stiles, and to react positively to their recommendations, the beef industry must first undertake a study such as this to identify beef consumers and to identify the vehicles to be used to reach these consumers.

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[1] McFadyen & Stiles, "Consumer Attitudes Toward Beef", 1972.

B. OBJECTIVES

The major hypothesis of this research project is: in Western Canada, consumers of beef products can be segmented for the purposes of media selection. The primary objective, then, of this study is to design a research project to test the main hypothesis stated above. A secondary objective is to identify segments of consumers should the hypothesis be found to be valid. It is intended that the identification of consumer segments will include information regarding the types of media to be used to communicate with each segment.

C. LIMITATIONS

The scope and terms of reference for this study are listed below:

1. The study is limited geographically. The research design is intended to be relevant primarily to Western Canada - in particular, Alberta.
2. The study is limited in reference to consumers in that only final consumers of beef products will be considered. The retail or industrial segments of beef product consumption will not be considered.
3. The study is limited in reference to the types of

media to be investigated. Promotion through the use of point-of-sale advertising, outdoor signs or word-of-mouth will not be considered. Similarily media such as flyers which are primarily used to disseminate price information will not be considered.

4. The study is limited by the findings of McFadyen and Stiles. The McFadyen and Stiles report indicated that consumers perceive individual beef cuts as separate products and that consumers do not have a definite perception of beef as a product classification. The report has also identified attitudes toward and perceptions of specific beef cuts or products.[1] In order to facilitate a transfer of results from this project to the recommendations of McFadyen and Stiles, this project must attempt to identify consumer segments according to the individual cuts or groups of beef cuts used. This represents a limitation in that other criteria for segmentation may be excluded in attempting to meet the beef usage criteria.

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[1] McFadyen & Stiles, "Consumer Attitudes Toward Beef", 1972.

D. DEFINITIONS

For the purposes of this research project, a household will be defined as a persen or group of persons occupying a dwelling, using the Federal Census definition (1971). The Federal Census definition of a dwelling is a seperate set of living quarters, with a private entrance from the outside, or from a common hallway or stairway, inside the building.[1] The eligible respondent in each household was defined as any person who was knowledgeable regarding the affairs of the household.

Media selection has been defined as the task of identifying types of media compatible with both the product and the market. The compatibility of the media class or of specific vehicles is of major concern. In this context, media selection is not concerned with the identification of the most efficient vehicle. Media efficiency has been defined by Thayer as being a function of the inverse relationship between effectiveness (reach, coverage, and cost).[2]

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[1] Statistics Canada, "1971 Census of Canada, Households by Composition", Bulletin 2.1-4, Vol. II-Part:I , Statistics Canada, Ottawa, February, 1973.

[2] Thayer, Lee, Communication and Communication Systems, Richard D. Irwin, Homewood, 1968, pp. 158-160.

CHAPTER II REVIEW OF THE LITERATURE

A. THE MARKET SEGMENTATION CONCEPT

Wendell Smith's article "Product Differentiation and Market Segmentation as Alternative Marketing Strategies", pioneered the concept of market segmentation.[1] Since that time "segmentation has become one of the most influential and fashionable concepts in marketing".[2] It "....has permeated the thinking of managers and researchers alike as much as, if not more than, any other single marketing concept since the turn of the century".[3] "However, simultaneously with this surge of interest, segmentation has become less a single concept than an umbrella topic covering a diversity of issues".[4]

According to Lunn, there is a fundamental distinction between the perspectives of marketers and market researchers. To marketers, segmentation is a strategy for directing products. In contrast, researchers, regard segmentation from a methodological standpoint: as a

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[1] Smith, Wendell R., "Product Differentiation and Market Segmentation as Alternative Marketing Strategies", Journal of Marketing , Vol. 21 (July 1956, pp.3-8.).
[2] Lunn, J. A., "Market Segmentation - An Overview", The Effective Use of Market Research , Johan Aucamp ed., Staples Press, London, 1971, p.100.
[3] Frank R.E., "Market Segmentation Research: Findings and Implications", in Frank, R.E., et al. Eds, The Application of the Sciences in Marketing Management , John Wiley & Sons, Toronto, 1968, pp.39-68.
[4] Lunn, "Market Segmentation - An Overview", p. 100.

technique to be used to describe fundamental market differences.[1]

Although market segmentation is seen in many perspectives, the basic concept remains unchanged. As defined by Smith:

> Segmentation is based upon developments on the demand side of the market and represents a rational and more precise adjustment of product and marketing effort to consumer or user requirements. In the language of the economist, segmentation is disaggregative in its effects and tends to bring about recognition of several demand schedules where only one was recognized before.[2]

In a marketers perspective this concept can be interpreted as a practice of "separating buyers into groups having different knowledge, attitudes and behavior toward a given product or service, then differentiating marketing strategies in both quality and quantity among them", anticipating higher profits than those that would accrue from treating buyers as a mass.[3]

The segmentation concept is based on three assumptions:

1. Consumers are different.
2. Differences in consumers are related to differences in market demand.
3. Segments of consumers can be isolated within the

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[1] Lunn, "Market Segmentation - An Overview", p. 100.
[2] Smith, "Product Differentiation and Market Segmentation as Alternative Marketing Strategies", p. 5.
[3] Andreasen, Alan R., "Geographic Mobility and Market Segmentation", Journal of Marketing Research, Vol. 3, No. 4, November 1966, pp. 341-8.

overall market.[1]

These propositions and the basic concept have been rewritten in the literature many times. However, they have never been revised. The strategy for segmentation is still equated with the act of defining subparts of some total market.[2] In essence, reducing a heterogeneous market into smaller homogeneous submarkets.

B. CRITERIA FOR EVALUATING SEGMENTS

Segmentation analysis will often easily define various submarkets. For these submarkets or segments to be useful to a marketer they must meet certain criteria. The criteria for usable segments can be broadly defined as:

1. Sufficient size - a usable segment must offer reasonable market potential.
2. Reachability - the segment must be able to receive communications without considerable waste.
3. Behavioral variations - the segment will be useful only if the relationship between attributes and

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[1] Engel, James F., Henry F. Fiorillo, Murray A. Cayley, Market Segmentation Concepts and Applications , Holt, Rinehart & Winston, Toronto, 1972, p.1-2.

[2] Claycamp, Henry J. & William F. Massey, "A Theory of Market Segmentation", Journal of Marketing Research , Vol. 5, (November, 1968), pp.388-394.

behavior is substantial.[1]

C. SEGMENTATION BASES

Markets can be segmented using a great variety of factors or bases. These bases or descriptor variables fall into five basic classifications:[2]

1. Socioeconomic, demographic, and geographic
2. Psychological
3. Product usage
4. Brand loyalty
5. Perceptual

APPENDIX B lists the dimensions of socioeconomic and demographic classifications. These variables along with geographic descriptors are primarily useful for general descriptions of segments and for selection of mass communications media since media information is commonly maintained using these types of classifications.[3]

Psychological bases derived from personality variables

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[1] Engel, James F., Hugh C. Wales, Martin R. Warshaw, Promotional Strategy , Richard D. Irwin, Homewood, 1971, pp148-149.
[2] Engel, Fiorillo, Cayley, Market Segmentation , p.12.
[3] Engel, Fiorillo, Cayley, Market Segmentation , p. 13.

have been used to segment markets. It appears however that the relationship between psychological variables and buyer behavior is tenuous.[1]

Markets have been segmented on product usage bases. Consumers are categorized into nonuser, light user, and heavy user groups and attribute differences are assessed between groups.[2] The "heavy-half" theory suggests that heavy users are the most productive segment and should therefore be the target of most marketing effort.[3] Conclusive empirical evidence on the usefulness of product usage bases for segmentation has not been found. There appears to be relatively little association between general household expenditures on food, housing, clothing, household furnishings and services, and socoieconomic characteristics.[4] Frank, Massey and Wind cite numerous studies that indicate low correlations between differences in consumption patterns and socioeconomic and demographic characteristics.[5] With regard to individual products, however, Mueller has found stable demographic differences among heavy, medium and light

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1 Frank, Ronald E., "Is Brand Loyalty a Useful Basis for Market Segmentation", Journal of Advertising Research , Vol. 7, (June,1967), pp.27-33.
2 Engel, Fiorillo, Cayley, Market Segmentation , p.14.
3 Twedt, Dik Warren, "How Important to Marketing Strategy is the Heavy User?", Journal of Marketing , Vol. 28, (January,1964), p.72.
4 Ferber R., "Research on Household Behavior", American Economic Review , LII (March,1962).
5 Frank Ronald E., William F. Massey, Yoram Wind, Market Segmentation , Prentice-Hall, Toronto, 1972, p.72-73.

users of several classes of food products.[6] In a later study, Wells was able to identify heavy users of certain groups of products by demographic and socioeconomic characteristics.[1] Although the evidence supporting a product usage base for segmentation purposes is inconclusive, for individual products, and from a marketer's perspective, "the question of telling buyers from non-buyers is one of the standard considerations in market research".[2]

Measures of brand loyalty have been successfully employed as bases for market segmentation.[3] The index of brand loyalty is usually achieved in either measuring attitudes toward a brand or in terms of the sequence of brand purchases.[4] Store patronage and loyalty variables can also be used as segmentation bases. These bases are identified and used in a similar fashion to the brand loyalty bases.[5]

[6] Mueller, Eva, "Effects of Consumer Attitudes on Purchase", American Economic Review , XIVII (December,1957), pp.946-965.
[1] Wells, W. D., "Backward Segmentation", Insights into Consumer Behavior , J. Arndt, (ed.), Allyn & Bacon, Boston, 1968, pp. 85-100.
[2] Cluntes-Ross, C., "Different Uses of Market Segmentation", The Effective Use of Market Research , Johan Aucamp, ed., Staples Press, London, 1971, p.135.
[3] Massey, W. F., "Brand & Store Loyalty as Bases for Market Segmentation", On Knowing the Consumer , J. W. Newman, ed., Wiley & Sons, 1966, pp.169-172.
[4] Engel, Fiorillo, Cayley, Market Segmentation , p.17.
[5] Frank, Massey, Wind, Market Segmentation , pp.73-75.

There are two approaches to segmentation using perceptual bases: "value or benefit segmentation", and the construction of a theoretical "perceptual space" to represent the market structure.[1]

Yankelovich was the first to propose the use of attitudes, motivations, values, usage patterns, aesthetic preferences and degree of susceptibility as bases for market segmentation.[2] Since then, benefit or value segmentation has developed as an approach to segmentation using perceptual bases. The benefit segmentation approach is based upon being able to measure consumer value systems in detail, together with what the consumer thinks about various components of a product category.[3] Segmentation is then achieved by division of consumers according to differences in benefits that accrue to the consumer from product or service purchases. The successful use of these perceptual bases for segmentation purposes depends on:

1. The ability to measure the desired attitudes and values and to identify individual differences in response to given stimuli.
2. The ability to predict subsequent response to marketing variables such as promotion or price.

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[1] Engel, Fiorillo, Cayley, Market Segmentation , p.17.
[2] Yankelovich, Daniel, "New Criteria for Market Segmentation", Harvard Business Review , Vol. 42, (March-April, 1964), pp.83-90.
[3] Haley, Russel I., "Benefit Segmentation", Journal of Marketing , Vol. 32, (July,1968) pp.30-35.

It is also desirable to associate attitudes, values, or benefits with other identifiable characteristics such as demographic and socioeconomic factors, or media usage habits.[1] This association will facilitate reaching the segment once a marketing plan has been constructed.

Unidimensional data, representing the degree of similarity among products or services has been analyzed using nonmetric, multidimensional scaling techniques. The result is an "attribute or perceptual space" for various market subgroups or clusters. These clusters can be analyzed to identify usable market segments defined on a perceptual basis.[2]

Although the concept of market segmentation has not been revised, there has been a change in the selection of segmentation bases. The initial shift has been from an "a priori" to an empirical approach. Criteria are being elicited in exploratory stages rather than being imposed. There has also been a shift toward explanatory rather than descriptive criteria for the selection of segmentation bases. The third major change in basis selection has been a move toward multiple rather than single criteria. There has also been growing recognition that market behavior is determined by a multiplicity of factors - social,

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[1] Frank, Massey, and Wind, Market Segmentation , p.79.
[2] Neidell, Lester A., "The Use of Nonmetric Multidimensional Scaling in Marketing Analysis", Journal of Marketing , Vol. 33, (October, 1969), pp.37-43.

psychological, and situational.[1] This growth in interest in multiple bases has resulted in the development of "psychographic" or "life-style" bases for segmentation. Psychographic variables reflect the overall manner in which people live and spend time and money.[2] Questions regarding activities, interests, opinions, and prejudices are asked with an aim of providing realistic consumer profiles.[3] Ziff reports that psychographic variables can be adequately used to define segments in relation to certain product groupings such as drugs, household furnishings, and food items.[4]

D. CRITERIA FOR EVALUATION OF ALTERNATIVE BASES

According to Kotler, the problem of segment definition is:

> How can the seller determine which buyers' characteristics produce the best partitioning of a particular market? The seller does not want to treat all the customers alike, nor does he want to treat them all differently.[5]

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[1] Lunn, "Market Segmentation - An Overview", pp. 114-115.
[2] Frank, Massey, Wind, Market Segmentation , p.58.
[3] Wells, W. D., D. J. Tigert, "Activities, Interests, and Opinions", Journal of Advertising Research , Vol. 11, No. 4, (August,1971). Pp27-35.
[4] Ziff, Ruth, "Psychographics for Market Segmentation", Journal of Advertising Research , Vol. 11, No. 2, (April,1971), pp.3-9.

Two problems are implied by this statement. "Which descriptor variables should be used as the basis for segmentation? And, how far should the segmentation process go?"[1]. The criteria for evaluation of segments has been discussed previously. However, criteria for the evaluation of segmentation bases must also be established. Frank, Massey and Wind cite the following as criteria useful for evaluating alternative bases for segmentation:

1. The variables or bases should divide a market into homogeneous segments that tend to respond in different ways to the promotional activity of the firm.
2. The bases or variables should be measurable.
3. The variables or bases should be accessible to the promotional mix of the firm or to the firm's feasible promotion mix given economic constraints.
4. The variables or bases should lead to increased profits from segmentation.[2]

E. SEGMENTATION PROBLEMS

[s] Kotler, P., Marketing Management: Analysis, Planning & Control , Prentice-Hall, Toronto, 1967, p.45.
[1] Frank, Massey, Wind, Market Segmentation , p.175.
[2] Frank, Massey, and Wind, Market Segmentation , pp.27-28.

The central and basic concept of market segmentation is fairly simple and straight forward. However, the utilization of segmentation as a marketing strategy can be exceedingly difficult for a firm. Four general problems to implementation of a segmentation strategy are:

1. Problems encountered is defining mutually exclusive market segments
2. Problems in measuring differences in response elasticities between plausible segments
3. Information constraints which affect the ability to selectively reach segments. Marginal response differentials in certain variables may not have relationships to demographic or socioeconomic variables required to select promotional media.
4. Institutional constraints that limit the ability to use existing means to reach segments with the desired degree of selectivity.[1]

F. MEDIA SELECTION & MARKET SEGMENTATION

The task of media selection is indeed complex. Writings in this area have generally tended to avoid attacking the

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[1] Claycamp & Massey, "A Theory of Market Segmentation", p. 37.

problem of identifying media compatible with the product and the market. Instead, the media selection problem is usually reduced to a problem of dollar allocation. Dispersion of a firm's economic and promotional resources to "appropriate" media being the majcr concern. The actual identification of appropriate media is alluded to, but techniques for accomplishing this task are rarely discussed.[1]

The theory and practice of market segmentation has both formalized and simplified the process of selecting media compatible to products and their markets. As early as 1963, Garfinkle was able to relate product usage data with media exposure patterns to identify market segments for various branded products.[2] Sissors matched demographic market profiles to individual television programs, identifying a process by which alternative media vehicles can be evaluated.[3]

It is apparent that market segmentation techniques can be readily applied to media selection. However, the selection of segmentation bases must be restricted to

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[1] McCarthy, Jerome E., Basic Marketing: A Managerial Approach , Richard D. Irwin, Homewood, 1968, pp.486-489. Also see Sandage, C. H. , Vernon Fryburger, Advertising Theory And Practice , Richard D. Irwin, Homewood, 1971, pp.423-449.

[2] Garfinkle, Norton, "A Marketing Approach to Media Selection", Market Segmentation Concepts and Applications , James F. Engel, H.F. Fiorillo, M.A. Cayley, eds., Holt-Rinehart & Winston, Toronto, 1972, pp.234-249.

[3] Sissors, Jack Z., "Matching Media With Markets", Journal of Advertising Research , Vol. 11, No. 5, (October,1971), pp.39-43.

demographic or socioeconomic variables, since media information is usually only available in this form. If a usable segment is to be defined and if a promotion campaign is to be constructed, the segment descriptor variables must be congruent with the media information.[1]

G. FOOD CONSUMPTION AND MARKET SEGMENTATION

A large number of studies have been undertaken regarding food products and market segmentation. Beldo, however, has formulated four basic segmentation propositions that he has applied specifically to food consumption. He proposed that four types of segmentation exist:

1. Structural Segmentation. Segments are generated by differences in physical consumer characteristics (age, sex, geography, physical environment) that dictate variations in physical product characteristics.
2. Functional Segmentation. Segments are generated by differences in consumers' attitudes, life styles, interests, and values that call for varying subjective product requirements.
3. Interpersonal Segmentation. Segmentation among

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[1] Engel, Fiorillo, Cayley, Market Segmentation , p.13.

individuals varying in physical or social characteristics without regard to product characteristics.

4. Intrapersonal Segmentation. Segmentation varying within sets of individuals displaying differences in attitudinal, social, or psychological characteristics. Individual may shift from one segment to another or may simultaneously belong to two or more segments".

These types of segmentation are multidimensional and all but structural segmentation exclude demcgraphic descriptors. Therefore, media selection and food consumption are compatible variables in market segmentation only if demographics are used.

Beldo has also identified five basic classifications of consumer food requirements. These are:

1. Nutritive - health
2. Sensory
3. Convenience
4. Social - psycholcgical
5. Value

Components of each of these five classifications can be related to any food product and consumers can be segmented along any of the four classifications listed previously.[1]

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[1] Beldo, Leslie A., "Market Segmentation and Food Consumption", On Knowing the Consumer, J.W. Newman, ed., John Wiley & Sons, Toronto, 1966, pp.90-106.

H. IMPLICATIONS OF THE LITERATURE FOR THE BEEF INDUSTRY

The literature has shown that the theory and practice of market segmentation can be applied to the consumption of food products. In order tc define usable segments for the beef industry in Alberta, and in order to select media to be used to reach these segments, the segments must be defined along the following bases:

1. Demcgraphic and socioeconomic
2. Product usage
3. Media usage

CHAPTER III. FIELD SURVEY METHODOLOGY

A. INTRODUCTION

If the central hypothesis of this research project is found to be valid, and if segments are subsequently identified, the results of the study by McFadyen and Stiles can be applied to these segments. In order to ensure that the results of this project are as compatible as possible with the McFadyen and Stiles report, similar field survey methodology was employed.

The survey was conducted between May 1, 1973 and July 5, 1973. Sampling technique, interviewing, and questionnaire design will be discussed separately below.

B. SAMPLING TECHNIQUE

The sample was drawn in the City of Edmonton only. The McFadyen and Stiles report studied Edmonton, Calgary, and Vancouver consumers. They concluded that inter-city differences in consumer attitudes toward beef were minimal and that similar advertising and educational programs would

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[1] McFadyen & Stiles, Consumer Attitudes Toward Beef , p.2.

be suitable for Western Canada in general.[1] Based on these results, this project only considered Edmonton consumers, however, it is assumed that the results will be applicable to consumers in Western Canada in general.

The sample drawn was a geographically restricted random sample otherwise known as an area sample (or a cluster sample).[1] This type of sample was drawn in order to facilitate the data collection, which was to be done by personal interview.

McFadyen and Stiles sampled clusters based on 1961 census tract information which had been classified into low, medium, and high socioeconomic areas. Census tracts had been subdivided and these subdivisions were used as the initial sampling unit.[2] These same divisions were sampled for this project. An equal number of clusters were drawn randomly from areas identified as being of high, medium and low socioeconomic level.

The sampling technique employed was a form of multiple-stage sampling. A population was not taken from the clusters drawn. Rather, elements of clusters were sampled randomly. The sampling unit chosen for this second stage was one city block. These elements were randomly selected by applying a sequentially numbered grid to a map delineating blocks in

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[1] Wentz, Walter B., Marketing Research: Management and Methods, Harper & Row, Toronto, 1972, pp. 151-156.
[2] McFadyen, MSc Thesis, p.44.

the clusters initially drawn. A list of random numbers was then read and grid numbers were observed. When a random number coincided with a grid number within a drawn cluster, the block covered most completely by that grid cell was chosen. If the block chosen was known to contain parkland, agricultural or industrial developments, it was discarded and another block was chosen by repeating the process.

When all the blocks had been chosen from the initial clusters, the third stage of the sampling procedure was begun. Initially in randomizing the selection of elements within each block, each block was treated as a separate population. Single household dwellings in a block were numbered beginning in the Northeast corner of the block and numbering counterclockwise. Apartments with numbering systems were numbered in order of apartment number. Unnumbered households in multiple dwellings were numbered from top to bottom floor, from left to right side of the building, and from front to back of the building. Ten households were then randomly selected from the number listed in each block. The interviewers then attempted to obtain six eligible respondents from the list of ten households chosen.

This technique dictated that the interviewers were required to return to the area to complete the required number of questionnaires if six valid and willing respondents could not be contacted on their initial visit to

the cluster. After four weeks of interviewing, only 150 questionnaires had been completed. The sampling technique was re-assessed and it was decided that a complete random selection of households within blocks was unnecessarily cumbersome and much too time consuming. To alter the sampling technique, the interviewers modified their schedule by beginning regular evening interviews. Previous to this evenings were reserved for "call backs". The random selection of households was also discontinued. Instead, the interviewers would approach a sampled block and then proceed to sample every household until six valid and willing respondents were contacted. If six questionnaires could not be filled out, the interviewers were still required to call back to that area. Adjacent clusters were approached at alternating times. For example, if clusters 49a and 49b were to be sampled, one cluster may be done in the morning or afternoon; the other cluster would then be sampled in the evening. It was felt that altering interviewing time in adjacent areas would provide for households and areas in the which the valid respondents were employed outside of their residence.

The sample size for this project was designated as 540 completed questionnaires. The demographic characteristics of the McFadyen sample very accurately depicted the population of Edmonton.[1] McFadyen completed 487 questionnaires in

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[1] McFadyen, MSc Thesis, p.61.

Edmonton, six from each of her sampled clusters. On the basis of the McFadyen results and personal communication with McFadyen on April 30, 1973, it was decided that a sample size of 540 would be adequate to obtain a cross-section of the Edmonton population. To obtain this sample size, 90 clusters were drawn - 30 from each socioeconomic level. The interviewers were instructed to obtain six questionnaires from each cluster.

C. INTERVIEWING

Data gathering was carried out by three trained female interviewers. One interviewer had previous experience on similar surveys. All interviewers were students in the School of Household Economics, University of Alberta. The interviewers assisted in pretesting the questionnaire and were responsible for the form of the final draft of the questionnaire. This was to allow the interviewers to tailor the final draft for ease of presentation and for ease of response coding. The interviewers received intensive instruction regarding the researcher's intended meaning of the questionnaire's various elements. During the pretest and the initial stages of the field survey the interviewers surveyed together to standardize their approach to respondents. For the remainder of the field survey, the

interviewers contacted respondents separately.

The interviewers met with the researcher once a day during the field survey to discuss the previous day's interviewing and to plan future procedures.

The interviewers were also responsible for coding the questionnaires. That is, transfering responses from the questicnnaires to Fortran Coding Sheets. These coding sheets then became a raw data base, which, when keypunched, provided an initial data file on which analysis by computer was performed. Part of every interviewer's working day was spent coding. This allcwed the interviewers to check or clarify responses before the interview became too historic.

D. QUESTIONNAIRE DESIGN

The questionnaire used to gather the data in the field survey is included in this report as APPENDIX A. The questionnaire presented in APPENDIX A, however, is not an exact reproductien of that used by the interviewers. As mentioned previously, the final draft of the questionnaire was formatted by the interviewers. Many multiple score questions contained very small answer spaces and numbers were usually used in place of descriptive titles for response categories. For presentation purposes, the field

survey questionnaire has been expanded to facilitate an understanding of the intended meaning of the questions and their anticipated responses.

Part I of the questionnaire (see APPENDIX A, Questions 1 - 8) were designed to gather demographic information from respondents, to identify relative socioeconomic status, and to identify household composition and family units. Name, address and telephone number were included only on the questionnaire and were not otherwise recorded or analyzed in any way. Interviewers were to use this information if it was necessary to recontact the respondent in order to correctly code their questionnaire. Age categories and income brackets used were identical to those used by McFadyen[1] to facilitate the transfer of results based on these elements.

Part II of the questionnaire (see APPENDIX A, Questions 9 - 20) was intended to gather information concerning the respondent's meat habits. For Question 9 respondents were given a card deck with one food category printed on each. They were then asked to discard any card labeled with a food category that was not consumed in the household. The remaining cards were to be ranked according to relative amounts of consumption (a rank of one was assigned to the meat category which accounted for the majority of the meat consumed).

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[1] McFadyen, Msc Thesis, p.193,208.

To provide responses to Question 19, respondents were given a list of beef products (see TABLE 3-1). Two preferences were solicited from respondents and they were then asked if they could identify the preferences of other members of the household. Zeros were recorded if preferences could not be established.

Question 20 required respondents to sort a card deck. Ten cards were presented to the respondent, each card bearing one name or classification of beef product. The names used on the cards and their intended representations appear in TABLE 3-1. Upon receipt of the card deck and after an explanation of the terms and their representations, the respondent was asked to sort through the deck and to discard any cards bearing names representing products that were not consumed in the household.

TABLE 3-1

BEEF PRODUCT NAMES USED TO ESTABLISH PREFERENCE AND USE DATA

1. Oven Beef Roasts - represents more expensive roasts that would normally be cooked uncovered. Eg. - sirloin tip, rump roast.

2. Pot Roasts - represents relatively less expensive roast that require covered cooking. Eg. Chuck roast, cross-rib roast.

3. Broiling Steaks - represents relatively expensive steaks that would normally be broiled or barbequed. Eg. Sirloin , T-Bone , Porterhouse , New York steak.

4. Chuck Steak - represents less expensive steaks including cuts such as cross-rib and flank steak.

5. Round Steak - representing round steak only - includes all variations such as top, bottom and eye of round.

6. Liver - representing all organ meats - tongue, heart, kidneys and liver.

7. Stew Beef - represents all stewing cuts including

shanks and soup bones.

8. Corned Beef - represents all cured and processed pure beef products.

9. Fresh Beef Sausage -

10. Ground Beef - represents all variations - ground beef, ground chuck, ground round, etc.

Note: The product classifications and their intended representations were determined through personal communications with McFadyen and Stiles regarding consumer attitudes and perceptions toward beef.

For the present season the respondent was then asked to sort the remaining cards into three groups according to relative amounts of use. One group was to represent products consumed quite often, another group to represent products consumed less often, and a third group to represent products consumed very little. The respondent was then asked to attempt to sort each group in a similar fashion. When further division of groups was no longer possible, the relative position of the numbered cards was recorded by the interviewer. At this time the respondent was asked to attempt to rank the cards again if they felt that the relative use of products in their household changes significantly between seasons. If a subsequent ranking was made, the interviewers recorded the season it was intended for and the relative position of the cards.

Questions 21 - 28, which comprise Part III of the questicnnaire, were designed to gather general data on households including the extent of active or passive participation in the "consumer movement" and the degree to which household members sought information regarding food products.

The remainder of the questionnaire, Part IV, Questions 29 - 38, were intended to:

1. Identify the media reaching the household. This includes the type of media (TV, radio, newspapers, magazines) as well as the specific channel or

vehicle.

2. Determine the extent to which the various media are used in the household.
3. Determine which members of the household used or are exposed to the various media and their individual preferences for the type of information provided by the media.

CHAPTER IV. FIELD SURVEY FINDINGS

A. INTRODUCTION

A total of 461 questionnaires were completed in the field survey, 169 questionnaires in areas previously designated as low in socioeconomic status, 146 questionnaires in medium socioeconomic areas, and 146 in high socioeconomic areas.

Descriptive statistics on the entire sample were obtained by processing the raw data using the Statistical Package for the Social Sciences (SPSS). Subprogram CODEBOOK was used to display response frequencies.[1] The descriptive statistics on the entire sample presenting information regarding demographic characteristics, food purchase and use habits, and media usage appear in tabular form as APPENDIX C.

B. SEGMENT DEFINITION

The questionnaire was completed by a wife or a mother

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[1] Nie, Norman, Dale H. Bent, C. Hadlai Hull, Statistical Package for the Social Sciences , McGraw-Hill, Toronto, 1970.

in a household in 78.3% of the cases. Husbands or fathers acted as respondents for only 6.7% of the completed surveys and teenage members of a household accounted for 5.9% of the respondents. Single persons living in "roommate" type households represented 5.2% of the respondents.

The purchase of groceries in the sampled households is mainly the responsibility of the wife or mother. In households reporting a familial relationship between household components, 84.8% indicated that the wife or mother was responsible for grocery purchases. In these households, 90.7% of the respondents indicated that the wife or mother was also responsible for the purchase of meats. These female householders also decided which meat products were to be consumed by the household. Of the familial households surveyed, 87.8% indicated that the wife or mother decided on the products to be consumed. Other categories of household components appear to play minor roles in this area to that of the wife or mother. These findings indicate that the wife or mother of a household is responsible for selecting and purchasing groceries and meats. It can be deduced then, that in the promotion of a food product category such as beef, the wife or mother of a household should be the target of the communications.

Combining this finding with the ideas presented in the literature, it appears that definition of market segments for the beef industry should be attempted using one or a

combination of the following bases:

1. Demographic or socioeconomic characteristics of households that can be defined by or related to a female household head such as a wife or mother.
2. Product usage habits of a household.
3. Media usage habits of the female head of the household.

The initial step toward segmentation was accomplished by the classification of respondents into plausible segment groups. These groups were based on the demcgraphic information collected on households during the field survey. The groups classified and the dimensions along which they were defined appear as APPENDIX E.

The field survey questionnaire variables were reduced from 359 to 35 key variables upon which the various groups would be analyzed. These variables embody key information regarding demcgraphic and socioeconomic characteristics of the sampled households as well as product and media information. The basis for the reduction in the number of variables was the decision to use the wife or mother as the target of promotional communications. Only variables that specifically related to her or her household were used. The variables and their descriptions appear as APPENDIX F.

The groups in similar classifications were tested for the existence of significant differences in response to each of the variables listed in APPENDIX F. Variance analysis

between groups was performed using the Division of Educational Research Services, Computer Documentation , Program NONP10, Cross Classification with Subdivision.[1] For each variable, the NONP10 program provided:

1. A chi-square statistic
2. Degrees of freedom
3. Level of significance

Only two groups were tested each time. The null hypothesis for the variance analysis was: the two groups have come from similar or identical populations and no significant differences exist in variable response between groups. The level of significance for the variance analysis was set at .05. This means: if for a certain variable, a chi-square statistic is generated providing a level of significance less than .05, the null hypothesis can be rejected.[2] In such cases, significant differences do exist between the groups in question in their responses for that particular variable.

APPENDIX G lists group pairs used in the analysis of variance. APPENDIX [redacted] TABLE 1 is a record indicating the variables that specific pairs of groups responded to in a significantly different manner. The groups are identified by

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[1] Division of Educational Research, University of Alberta, Computer Program Documentation, 360/67, Supplement #2, NONP10 - Cross Classification with Subdivision, January, 1972.

[2] Siegel, Sidney, Nonparametric Statistics for the Behavioral Sciences , McGraw-Hill, Toronto, 1956, Chapter 8.

a "Run Number" which corresponds to the sequence in which the pairs are recorded in APPENDIX G. This table also demonstrates that market segmentation can be applied to the consumer market for beef products. The three propositions upon which the segmentation concept has been based (see page 9) have been identified by this research. Consumers have been shown to be different, and isolation by demographic and socioeconomic classifications results in the identification of differences between groups and product usage. This is particularily visible in the number of groups that indicated significant differences in response to variables 1 - 15, which identify beef product usage (see APPENDIX F, APPENDIX G, and APPENDIX H - TABLE 1). Based on these findings, the major hypothesis of this project must be asserted as valid: consumers of beef products in Western Canada can be segmented for the purpose of media selection.

In an attempt to meet the secondary objective of the study, to actually identify segments of consumers, the groups identified in APPENDIX E were tested against the population for significant differences in responses to the variables. The "population" was defined as the entire field survey. APPENDIX H - TABLE 2 is a record of the variables upon which significant differences in response between the various groups and the population were observed. No differences were found between either the Medium Socoieconomic group or the Household #1 group (small married household with no family) and the population. Very few

differences were observed between the following groups and the population:

1. High Socioeconomic
2. Household #2 - small married household with young children
3. Household #3 - small household with teenagers
4. Household #5 - moderately large household with young children and teenagers
5. Old Households
6. Medium Income
7. High Income
8. Middle Occupation
9. Top Occupation

This however, does not indicate that these groups do not qualify as plausible segments since a lack of observed differences could be attributed to a high proportion of the various groups being contained in the sample population. For example, 40.5% of the sample cases fell into the Top Occupation group (see APPENDIX C-TABLE 1). It is not surprising then, that differences between the Top Occupation group and the sample population were not observed.

Many differences that do exist as reported in APPENDIX H - TABLE 2, appear to be directly related to the demographic or socioeconomic bases upon which the groups were defined. Variables such as the following appear to be

directly related to income and occupation characteristics of the households:

1. Variable #5 - the number of times beef products are consumed in the household per week.
2. Variable #32 - Edmonton Journal purchase frequency.
3. Variable #34 - the number of "other papers" received by the household.
4. Variable #35 - the number of magazines received by the household.

When tested against the population, many groups did not display differences in response to variables related to product usage (variables 1 to 15). Only Low Socioeconomic, Low Income, and Household #8 (the large household), showed differences in response to questions regarding the relative use of specific beef products (variables 6 - 12).

APPENDIX H-TABLE 3 displays group pairs analyzed and the variables for which significantly different responses were observed. All groups classified according to either socioeconomics, income, or occupation, displayed product usage differences when tested against other groups in the same classification. For example, 39.3% of the High Income group ranked Oven Beef Roasts (representing the relatively more expensive roasts) as their most consumed beef product.

Only 24.3% of the Low Income group did the same. The overall difference in all ranks for Oven Beef Roasts between these two groups was significant at a level of .046 (chi-square=15.7, with 8 degrees of freedom). The High Socioeconomic group reported relatively less consumption of Liver and Stew Beef than the Low Socioeconomic group. Differences were significant at a level of .006 for Liver (chi-square=24.65, with 10 degrees of freedom) and an absolute difference was recorded for Stew Beef (level of significance=0.00, chi-square=52.37, with 10 degrees of freedom). Product usage differences do not appear as often between the various household size groups. However, some differences are observed when small households are tested against large households (Household#1 or Household #2 with Household #8). Age classifications do not appear to differentiate consumers' consumption of beef products. The only exception to this is between middle aged and old households. Old households consume relatively more Stew Beef than middle-aged households (overall rank significantly different at a level of .02, chi-square=21.24, with 10 degrees of freedom).

The findings presented in APPENDIX H-TABLE 3 indicate that segmentation for the Beef Industry could be performed using demographic or socioeconomic bases. The segments could be described as:

1. High, Medium, and Low Socioeconomic
2. Very High, High, Medium, and Low Income

3. Top, Middle, and Bottom Occupation
4. Large and Small Households

Media vehicles to be used to reach these segments can be observed in APPENDIX H-TABLE 3 For example, if one desired to promote to a high socioeconomic segment, it can be observed that the High group ranks Channel 5 - CBXT as being used more frequently than does the Low group (High vs. Low Socioeconomic - Variable 25 prefixed by a +). The High Socioeconomic group also purchases the Edmonton Journal on a more regular basis than does the Medium or the Low group (Variable 32 prefixed by a + for High vs Medium, and for High vs. Low). APPENDIX H-TABLE 3 can in essence be considered as a segmentation schedule. Differences between segments can be observed or specific variables can be picked out and differing groups can then be located. Specific segment definition will depend upon the particular desires of the beef industry.

CHAPTER V. CONCLUSIONS

The primary objectives of this project were to determine if market segmentation was a viable strategy for use by the beef industry in Alberta and to identify the segments should the strategy be found to be sound. Market segments have been identified according to demographic, socioeconomic and product usage bases. These bases are congruent with literature findings regarding market segmentation and product categories similar to beef.

A secondary objective of the project was to identify specific media to be used to reach the market segments if they were identifiable. The findings presented indicate that this objective has not been entirely fulfilled. Very few specific media differences have been observed between segments. The exception to this is the differences in regularity of purchase of the Edmonton Journal between groups. This lack of specific media information is probably due in part to the field survey design. Respondents were not asked to rank television and radio vehicles according to the individual's relative use (see APPENDIX A, Questions 30 and 35). A relative index of use could therefore not be obtained and these variables had to be excluded from the segmentation definitions. This lack of specific media identification should not diminish the usefulness of the segments defined. Since the segments have been determined on a socioeconomic

or demographic basis, and since the media industry compiles audience information along similar bases, the segments should be easily reachable and should prove to be valuable in the promotion of beef in Western Canada.

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APPENDIX A

FIELD SURVEY QUESTIONNAIRE

FIELD SURVEY QUESTIONNAIRE: PART I

1. Cluster Number .....

   Name: .....

   Address: ..... Phone: .....

2. HOUSEHOLD COMPOSITION: Indicate the number of people in this household in the various categories listed below.

   a) wife or mother .....

   b) husband or father .....

   c) children 13 & under .....

   d) teenagers over 13 .....

   e) dependents 20 & over .....

   f) female roommates .....

   g) male roommates .....

   h) other .....

3. What is the relationship of the respondent to other members of the household?

   .....

4. Indicate the number of people in the household who are:

   a) under 6 years old .....

   b) 7 to 12 years old .....

   c) 13 to 17 years old .....

   d) 18 to 23 years old .....

   e) 24 to 25 years old .....

   f) 36 to 64 years old .....

   g) over 64 years old .....

5. What is the age category of the respondent? .....

6. OCCUPATION

	Major Wage Earner	Other Wage Earner
a) Professional or Managerial	.....	.....
b) Proprietor	.....	.....
c) Clerical or Sales	.....	.....
d) Skilled or Technical	.....	.....
e) Semi-Skilled	.....	.....
f) Unskilled	.....	.....
g) Student	.....	.....
h) Retired	.....	.....
i) Unemployed	.....	.....

8. Indicate the TOTAL income of the household.

under $3,000	.....
$3,000 to $4,999	.....
$5,000 to $6,999	.....
$7,000 to $9,999	.....
$10,000 to $14,999	.....
over $15,000	.....

FIELD SURVEY QUESTIONNAIRE: PART II

9. Rank the following commodities according to the quantity consumed.

Beef	.....
Pork	.....
Lamb	.....
Poultry	.....
Fish	.....

10. Who is mainly responsible for the purchase of groceries for this household?

.....

11. Is the same person responsible for the purchasing of meats?

Yes ..... No .....

If No, indicate who is responsible.

.....

12. Who is responsible for deciding which meat products are to be consumed in this household?

.....

13. Indicate purchase frequencies for groceries and meats.

	Groceries	Meats
a) Less than once per month	.....	.....
b) once per month	.....	.....
c) every two weeks	.....	.....
d) once per week	.....	.....
e) more than once per week	.....	.....
f) other	.....	.....

15. When beef is purchased is it usually purchased in:

a) bulk (quarters, freezer specials) .....

b) retail cuts .....

16. What is the total grocery expenditure for this household? (including meats)

a) weekly .....

or

b) monthly .....

17. How many times per week are beef products consumed in this household?

.....

18. How sensitive are members of this household to the toughness of beef products?

	very sensitive		neutral		very insensitive	unknown
wife/mother	.....	.....	.....	.....	.....	.....
husband/father	.....	.....	.....	.....	.....	.....
children 13 & under	.....	.....	.....	.....	.....	.....
teenagers	.....	.....	.....	.....	.....	.....
dependents 20 & over	.....	.....	.....	.....	.....	.....
female roommates	.....	.....	.....	.....	.....	.....
male roommates	.....	.....	.....	.....	.....	.....
others	.....	.....	.....	.....	.....	.....

19. For individual members of this household, list preferences for beef products. Use beef product classifications listed in Question #20.

a) wife/mother	.....	.....
b) husband/father	.....	.....
c) children 13 & under	.....	.....
d) teenagers	.....	.....
e) dependents	.....	.....
f) female roommate	.....	.....
g) male roommates	.....	.....
h) others	.....	.....

20. Rank the following beef products according to their relative amounts of consumption in the household.

	Rank for Present Season	Other Season
a) Oven Beef Roasts	.....	.....
b) Pot Roasts	.....	.....
c) Broiling Steaks	.....	.....
d) Chuck Steaks	.....	.....
e) Round Steaks	.....	.....
f) Liver	.....	.....
g) Stew Beef	.....	.....
h) Corned Beef	.....	.....
i) Fresh Sausage	.....	.....
j) Ground Beef	.....	.....

FIELD SURVEY QUESTIONNAIRE: PART III

21. Do you consider yourself to be interested in the consumer movement?

Yes ..... No .....

Are other members of the household interested in the movement?

Yes ..... No .....

22. Are any members of this household members of consumer associations?

Yes ..... No .....

23. Have any members of this household ever attended any consumer education meetings?

Yes ..... No .....

24. Have any members of this household requested information on food products from:

a) The University of Alberta Yes ..... No .....

Were you satisfied with the information?

Yes ..... Neutral ..... No .....

Would you return for more information?

Yes ..... No .....

b) Edmonton Power Yes ..... No .....

Were you satisfied with the information?

Yes ..... Neutral ..... No .....

Would you return for more information?

Yes ..... No .....

c) Northwestern Utilities Yes ..... No .....

Were you satisfied with the information?

Yes ..... Neutral ..... No .....

Would you return for more information?

Yes ..... No .....

d) Calgary Power Yes ..... No .....

Were ycu satisfied with the information?

Yes ..... Neutral ..... No .....

Would ycu return fcr more information?

Yes ..... No .....

e) Department of Agriculture Yes ..... No .....

Were you satisfied with the information?

Yes ..... Neutral ..... No .....

Would you return fcr more information?

Yes ..... No .....

f) Supermarkets Yes ..... Nc .....

Were you satisfied with the information?

Yes ..... Neutral ..... No .....

Would you return fcr more information?

Yes ..... No .....

g) Manufacturers or Producers Yes ..... Nc .....

Were you satisfied with the information?

Yes ..... Neutral ..... No .....

Would you return fcr more information?

Yes ..... No .....

25. Who cooks the majority of the meals for this household?

.....

26. Do other members of the household cook?

Yes ..... Nc .....

If YES, indicate who.

....

27. Have any members of this household ever picked up new recipe information from supermarkets?

Yes ..... No .....

If YES, have you ever used these recipes?

Yes ..... No .....

28. Are you satisfied with the quality of cookbook available to you?

Yes ..... No .....

How many cookbooks do you have?

.....

FIELD SURVEY QUESTIONNAIRE: PART IV

29. How many radios are used in this household? .....

30. Radio Use. For members of this household list the radio stations listened to, their reason for listening, the times of the day when listened to, the days of the week when listened to, and the number of minutes per week spent listening to the radio.

a) wife/mother

Stations ....

Music ..... News ..... Other .....

Morning ..... Afternoon ..... Evening .....

Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

b) husband/father

Stations ....

Music ..... News ..... Other .....

Morning ..... Afternoon ..... Evening .....

Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

c) Teenagers

Stations ....

Music ..... News ..... Other .....

Morning ..... Afternoon ..... Evening .....

Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

d) Dependents 20 & over

Stations ....

Music ..... News ..... Other .....

Morning ..... Afternoon ..... Evening .....

Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

e) Female roommates

Stations ....

Music ..... News ..... Other .....

Morning ..... Afternoon ..... Evening .....

Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

f) Male roommates

Stations ....

Music ..... News ..... Other .....

Morning ..... Afternoon ..... Evening .....

Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

g) Others

Stations ....

Music ..... News ..... Other .....

Morning ..... Afternoon ..... Evening .....

Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

31. How many television sets does this household use? .....

32. Does this household subscribe to cable television?

Yes ..... No ..... Plan to .....

33. Rank the following television channels according to the amount of time they are watched by members of this household. (1= most watched, 5= least watched)

a) CFRN Channel 3 (Cable 2) .....

b) CBXT Channel 5 (Cable 4) .....

c) CBXFT Channel 11 (Cable 12) .....

d) KXLV Cable 7 .....

e) KSPS Cable 9 .....

34. For individual members of this household, list preferences for types of television programs.

a) sports
b) news & documentaries
c) children's shows
d) movies
e) outdoor adventures
f) soap operas
g) general entertainment
h) dramas
i) no preference

a) wife/mother .....

b) husband/father .....

c) children 13 & under .....

d) teenagers .....

e) dependents 20 & over .....

f) female roommates .....

g) male roommates .....

h) others .....

35. For members of this household list: the television channels watched, the times of day they are watched, the days of the week they are watched, and the number of minutes they are watched per week.

a) wife/mother

Stations ....

Morning .....
Early Afternoon .....
Late Afternoon .....
Evening .....
Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

b) husband/father

Stations ....

Morning .....
Early Afternoon .....
Late Afternoon .....
Evening .....
Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

c) Children 13 & under

Stations ....

Morning .....
Early Afternoon .....
Late Afternoon .....
Evening .....
Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

d) teenagers

Stations ....

Morning .....
Early Afternocn .....
Late Afternoon .....
Evening .....
Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

e) dependents 20 & over

Stations ....

Morning .....
Early Afternocn .....
Late Afternoon .....
Evening .....
Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

f) female roommates

Stations ....

Morning .....
Early Afternocn .....
Late Afternoon .....
Evening .....
Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

g) male rcommates

Stations ....

Morning .....
Early Afternoon .....
Late Afternoon .....
Evening .....
Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

h) others

Stations ....

Morning .....
Early Afternoon .....
Late Afternoon .....
Evening .....
Late Evening .....

Weekdays ..... Weekends ..... Everyday .....

Minutes per week .....

36. Do any members of this household subscribe to or purchase the EDMONTON JOURNAL on a regular basis?

Yes ..... No .....

If YES, indicate how cften THE JOURNAL is received.

everyday .....

Monday .....

Tuesday .....

Wednesday .....

Thursday .....

Friday .....

Saturday .....

Indicate the reading habits of members of the household.

1. do not read 2. read all sections equally

3. read special secticns only

a) wife/mother .....

b) husband/father .....

c) teenagers .....

d) dependents 20 & over .....

e) female roommates .....

f) male roommates .....

g) cthers .....

37. List the other newspapers received by this household.

Out-of-town Dailies .....

.....

Edmonton or local Weeklies .....

.....

Out-of-town Weeklies .....

.....

38. List the magazines received by this household.

	Subscriptions	Casual
a) women's	.....	.....
b) business	.....	.....
c) children's	.....	.....
d) teen's	.....	.....
e) men's	.....	.....
f) sports	.....	.....
g) hobbies	.....	.....
h) leisure	.....	.....
i) travel	.....	.....
j) news	.....	.....
k) adventure	.....	.....

	Subscriptions	Casual
l) scientific	.....	.....
m) automotive	.....	.....
n) trade magazines	.....	.....
o) academic journals	.....	.....
p) general interest	.....	.....
q) humorous	.....	.....
r) other	.....	.....

APPENDIX B

DIMENSIONS OF SOCIOECONOMIC & DEMOGRAPHIC CLASSIFICATIONS

1. Income
2. Education
3. Occupation
4. Social class
5. Race
6. Nationality
7. Ethnicity
8. Age
9. Sex
10. Religion
11. Family size
12. Position in life cycle

SOURCE: Engel, Fiorillo, Cayley, Market Segmentation, 1972, p. 12-13.

APPENDIX C

DESCRIPTIVE STATISTICS ON SAMPLE

APPENDIX C - TABLE 1

REPORTED OCCUPATIONS

(% of total sample)

Occupation	Major Wage Earner	Other Wage Earner
Professional or Managerial	26.2	5.6
Proprietor	6.1	0.4
Clerical or Sales	8.2	13.0
Skilled or Technical	24.1	3.0
Semi-skilled	11.7	2.0
Unskilled	7.4	4.1
Student	2.6	2.2
Retired	10.8	3.7
Unemployed	2.6	1.3
Uncategorized	0.2	64.6*

*indicates that 64.6% of sampled households had only one wage earner.

APPENDIX C - TABLE 2
REPORTED INCOMES

Total Household Income	% of Total Sample
under $3000	6.1
$3000 to 4999	8.5
$5000 to 6999	11.9
$7000 to 9999	24.5
$10,000 to 14,999	27.1
over $15,000	21.9

APPENDIX C - TABLE 3

FOOD PURCHASE FREQUENCY

(% of total sample)

Frequency	Total Groceries	Beef Products
Less than once/month	1.3	24.1
Once/month	5.2	5.0
Every two weeks	31.9	20.2
Once/week	54.2	39.5
More than once/week	7.4	8.7
Other	0	2.6

APPENDIX C - TABLE 4
WEEKLY GROCERY EXPENDITURES

Expenditure in dollars	% of those respondents able to identify a weekly grocery expenditure regardless of grocery purchase habits
1-10	2.1
11-15	5.1
16-20	10.1
21-25	10.1
26-30	18.5
31-35	7.2
36-40	12.2
41-45	5.1
46-50	14.4
51-55	2.1
56-60	3.8
61-65	1.7
66-70	1.7
71-75	1.3
76-80	0.4
86-90	0.4
96-100	2.1
100+	0.4

APPENDIX C - TABLE 5
MONTHLY GROCERY EXPENDITURES

Expenditure in dollars	% of those respondents able to identify a monthly grocery expenditure regardless of grocery purchase habits
30 or less	2.2
31-40	2.2
41-50	2.2
51-60	4.4
61-70	2.6
71-80	6.6
81-90	3.9
91-100	11.5
101-110	4.0
111-120	7.0
121-130	5.3
131-140	4.8
141-150	11.0
151-160	4.3
161-170	0.4
171-180	3.1
181-190	0.8
191-200	11.5
200-225	2.6
226-250	6.1
251+	2.6

APPENDIX C - TABLE 6
USE AND SATISFACTION WITH CONSUMER INFORMATION SOURCES

Information Source	% of Total Sample	*Satisfaction		*Return for Information	
		Satisfied	Neutral	Yes	No
University of Alberta	6.5	85.7	14.3	100	0
Edmonton Power	6.9	93.6	6.1	100	0
Northwestern Utilities	43.8	97.5	1.5	97.5	2.5
Calgary Power	3.0	76.9	23.1	83.3	16.6
Dept. of Agriculture	10.4	91.7	6.2	98.0	2.0
Supermarkets	8.1	75.7	16.2	89.2	10.8
Manufacturer or Producer	6.5	73.3	10.0	83.3	16.6

*Expressed as a % of those households that had requested information.

APPENDIX C - TABLE 7
RANK OF QUANTITY OF FOOD COMMODITY CONSUMED
(% of total sample)

Food Commodity	#1	#2	#3	#4	#5	Not Consumed
Beef	84.4	8.2	5.0	2.2	0.2	0.0
Pork	7.8	30.6	31.9	21.7	3.5	4.6
Lamb	1.1	2.4	2.8	6.5	17.4	69.8
Poultry	9.5	50.3	32.3	6.3	0.2	1.3
Fish	2.8	9.5	26.0	50.8	4.1	6.7

APPENDIX C - TABLE 8
RELATIVE CONSUMPTION OF FOOD COMMODITIES

Food Commodity	Rank	% of Total Sample That Did Not Consume Food Commodity
Beef	1	0.0
Poultry	2	1.3
Pork	3	4.6
Fish	4	6.7
Lamb	5	69.8

Note: See Appendix D for explanation of ranking technique.

APPENDIX C - TABLE 9
SENSITIVITY TO TOUGHNESS OF BEEF PRODUCTS

Household Component	Very Sensitive		Neutral		Very Insensitive
Wife/ Mother	42.9	26.7	14.2	4.2	12.0
Husband/ Father	46.9	28.6	8.2	4.8	11.2
Children (13yrs. & under)	39.0	22.4	15.0	4.9	14.2
Teenagers	39.6	27.3	10.4	6.5	13.6
Dependents (20yrs. & over)	46.8	19.1	6.4	4.3	17.0
Female Roommates	30.8	23.1	23.1	0	23.1
Male Roommates	29.4	23.5	11.8	5.9	23.5
Other	52.6	15.8	15.8	2.6	10.5

Note: Figures expressed as a % of each particular household component.

APPENDIX C - TABLE 10
RANK OF INDIVIDUAL BEEF PRODUCT PREFERENCES

Household Components	Beef Products					
	Oven Beef Roasts	Pot Roasts	Broiling Steaks	Chuck Steak	Round Steak	Liver
Wife/ Mother	1	4	2	8	5	7
Husband/ Father	1	5	2	6	4	8
Children (13 and under)	2	6	3	7	5	9
Teenagers	1	5	2	6	4	8
Dependents (20 and over)	1	7	2	5	3	6
Female Roommates	1	3	1	-	5	3
Male Roommates	1	3	2	-	4	-
Other	1	4	2	5	5	5
Average Rank	1.13	4.63	2.0	6.17	4.38	5.75
Overall	1	5	2	8	4	6

APPENDIX C - TABLE 10, Continued

Household Components	Beef Products					
	Stew Beef	Corned Beef	Fresh Sausage	Ground Beef	No Pref.	Only One Pref.
Wife/ Mother	6	9	10	3	0.2	5.7
Husband/ Father	7	9	10	3	0	5.4
Children (13 and under)	4	10	8	1	7.3	18.3
Teenagers	7	9	-	3	3.2	14.3
Dependents (20 and over)	7	-	-	3	10.6	23.4
Female Roommates	-	-	-	5	0	0
Male Roommates	5	-	-	5	5.9	5.9
Other	5	-	9	3	0	7.9
Average	5.86	9.25	9.25	3.33		

Note: Ranks established by combination of relative response frequencies.

APPENDIX C - TABLE 11
BEEF PRODUCTS - RELATIVE USAGE

Beef Product	Rank	% of Total Sample That Did Not Consume Product
Ground Beef	1	3.9
Oven Beef Roasts	2	5.2
Broiling Steaks	3	14.5
Round Steak	4	20.0
Pot Roasts	5	25.6
Stew Beef	6	23.0
Chuck Steak	7	29.1
Liver	8	29.3
Fresh Sausage	9	47.3
Corned Beef	10	62.0

Note: See Appendix D for explanation of ranking technique.

APPENDIX C - TABLE 12
NUMBER OF RADIO AND TELEVISION SETS USED IN HOUSEHOLDS

Number of Appliances Used	Television	Radio
0	2.4%	2.0%
1	63.1	26.2
2	27.1	26.5
3	5.9	20.8
4 or more	1.5	24.5
5 or more		13.2
MEAN	1.453	2.69
MODE	1.0	2.0

Note: % of total number of households sampled.

APPENDIX C - TABLE 13
RADIO USE BY HOUSEHOLD COMPONENTS

	Household Component						
	Wife/ Mother	Husband/ Father	Teens	Depend. (20yrs. & over)	Roomates Male	Roomates Fem.	Other
Don't Listen (%)	8.5	9.7	5.2	2.1	17.6	0	18.4
Listen to 1 or more stations (%)	91.5	90.3	94.8	97.9	82.4	100	81.6
Listen to 2 or more stations (%)	42.2	39.0	17.5	34.0	47.1	46.2	26.3
Listen to 3 or more stations (%)	16.0	13.0	4.5	8.5	11.8	23.1	0
Mean min. per week listened	208	161	184	168	152	150	161

APPENDIX C - TABLE 14
RADIO STATIONS LISTENED TO

Radio Station	Household Component						
	Wife/ Mother	Husband/ Father	Teens	Depend. (over 20yrs.)	Roommates Male	Roommates Fem.	Other
CFRN	29.5	25.2	11.6	25.5	23.6	30.8	15.8
CFRN-FM	14.0	13.5	1.3	6.3	11.8	0	0
CJCA	30.7	26.4	6.4	10.7	11.8	0	26.3
CHED	22.4	22.4	88.3	70.2	47.1	84.6	34.2
CHQT	19.2	18.4	3.2	6.3	23.5	46.2	18.5
CHFA	0.5	0.5	0	0	0	0	2.6
CBXT	10.1	9.1	0	4.3	0	0	0
CKUA	6.8	7.9	3.8	12.8	17.6	7.7	0
CFCW	16.8	18.9	1.9	4.2	5.9	0	10.6

Note: All figures expressed as a % of the particular household compcnent indicating that they listened on a regular basis to each ststion.

APPENDIX C - TABLE 15
TELEVISION USE BY HOUSEHOLD COMPONENTS

Household Component	# of T.V. Stations Watched					
	0	1 or More	2 or More	3 or More	4 or More	Mean Min. Watched Per Week
Wife/ Mother	4.0	96.0	76.9	35.1	9.7	162
Husband/ Father	5.1	94.9	83.2	37.0	9.2	154
Children (13yrs. & under)	8.9	91.1	78.9	43.1	16.7	175
Teenagers	3.2	96.8	87.0	44.2	11.7	152
Dependents (20yrs. & over)	8.5	91.5	78.7	44.7	10.6	155
Female Roommates	15.4	84.6	69.2	15.4	0	140
Male Roommates	23.5	76.5	70.6	23.5	5.9	105
Other	13.2	86.6	71.1	21.1	2.6	147

APPENDIX C - TABLE 16
RANK OF TELEVISION CHANNELS ACCORDING TO RELATIVE USE

ACCORDING TO RELATIVE USE Television Channel	#1 (Most)	#2	#3	#4	#5 (Least)	Not Watched
3	61.6	27.3	7.2	0.4	0.2	3.3
5	36.0	39.5	20.0	0.9	0.2	3.5
11	1.1	1.7	18.7	11.1	6.3	61.2
Cable 7	23.4	9.3	8.5	1.1	0.0	57.7
Cable 9	1.3	0.0	1.1	13.7	5.4	78.5

Note: All figures expressed as a % of the sample that indicated television use.

APPENDIX C - TABLE 17
TELEVISION STATIONS WATCHED

Household Component	Television Station				
	CFRN ch.3	CBXT ch.5	CBXFT ch.11	KXLV cable 7	KSPS cable 9
Wife/ Mother	86.7	82.3	9.6	32.8	6.4
Husband/ Father	86.7	87.4	10.0	34.1	5.9
Children (13yrs. & over)	82.0	75.2	27.1	37.4	7.7
Teenagers	90.2	87.7	9.7	42.2	9.7
Dependents (20yrs. & over)	93.6	82.9	2.1	34.0	12.8
Female Roommates	76.9	69.2	0	23.1	0
Male Roommates	70.6	70.6	11.8	17.7	5.9
Other	84.2	68.4	0	26.3	2.6

Note: All figures expressed as a % of the particular household component indicating that they watched on a regular basis to each station.

APPENDIX C - TABLE 18
RADIO ISTENING REASONS

	Music		News		Other	
	Yes	No	Yes	No	Yes	No
Wife/ Mother	70.8	28.5	55.7	44.1	44.6	55.0
Husband/ Father	65.8	34.2	64.5	35.5	29.6	70.2
Teenagers	90.9	9.1	27.3	72.7	17.5	82.5
Dependents (20 and over)	93.6	6.4	44.7	55.3	14.9	85.1
Female Roommates	100	0	7.7	92.3	23.1	76.9
Male Roommates	76.5	23.5	52.9	47.1	17.6	82.4
Other	68.4	31.6	42.1	51.9	23.7	76.3

APPENDIX C - TABLE 19
RADIO LISTENING TIMES

	Time of Day				Days of Week		
	Mcrn.	Aft.	Eve.	Lt.Eve.	Week Days	Week End	Every Day
Wife/ Mother	81.6	31.4	28.1	6.4	21.2	2.1	76.5
Husband/ Father	71.7	31.6	41.8	7.1	14.8	4.6	70.2
Teenagers	50.0	35.7	65.6	11.7	7.1	2.6	84.4
Dependents (20 and over)	59.6	25.5	72.3	17.0	4.3	0	93.6
Female Roommates	76.9	46.2	69.2	7.7	7.7	7.7	76.9
Male Roommates	52.9	23.5	64.7	5.9	17.6	5.9	52.9
Other	52.6	21.1	36.8	7.9	0	2.6	78.9

APPENDIX C - TABLE 20
TELEVISION VIEWING TIMES

	Time of Day					Day of Week		
	Morn.	Early Aft.	Late Aft.	Eve.	Late Eve.	Week Days	Week Ends Only	Every Day
Wife/ Mother	5.7	24.1	17.5	85.6	14.2	15.3	7.8	72.6
Husband/ Father	1.0	5.1	8.4	88.0	16.1	11.0	10.7	72.4
Children (13 and under)	41.5	25.6	44.7	61.0	1.6	11.0	4.9	74.0
Teenagers	1.9	10.4	26.6	90.9	9.1	11.7	9.1	75.3
Dependents (20 and over)	2.1	2.1	12.8	83.0	10.6	8.5	8.5	66.0
Female Roommates	7.7	7.7	15.4	84.6	15.4	7.7	7.7	69.2
Male Roommates	0	5.9	5.9	70.6	35.3	17.6	0	58.8
Other	5.3	10.5	13.2	68.4	18.4	10.5	7.9	68.4

APPENDIX C - TABLE 21
INDIVIDUAL TELEVISION PROGRAM PREFERENCES

Household Component	Program				
	Sports	News	Children's	Movies	Adventure
Wife/ Mother	5.2	17.2	.5	32.1	4.5
Husband/ Father	36.2	21.4	.3	20.9	7.4
Children (13 and under)	1.2	.4	74.0	6.1	.8
Teenagers	16.2	1.9	5.2	40.9	3.2
Dependents (20 and over)	25.5	6.4	0	46.8	0
Famale Roommates	7.7	0	0	38.5	0
Male Roommates	5.9	23.5	0	41.2	5.9
Other	18.4	2.6	0	23.7	2.6

APPENDIX C - TABLE 21, Continued

Household Component	Program				
	Soap Operas	General	Drama	No Pref.	Other
Wife/ Mother	10.6	16.0	7.3	3.8	2.8
Husband/ Father	0	5.9	2.0	4.1	1.8
Children (13 and under)	0	7.3	.8	2.0	7.3
Teenagers	.6	17.5	5.2	5.2	3.9
Dependents (20 and over)	0	8.5	6.4	2.1	4.3
Female Roommates	0	30.8	7.7	0	15.4
Male Roommates	0	0	0	5.9	17.6
Other	0	23.7	10.5	10.5	7.9

Note: All figures expressed as a % of the number of each household component in the total sample.

APPENDIX C - TABLE 22
NEWS PAPER READING HABITS

Household Component	Do Not Read	All Sections	Special Only	No Response
Wife/ Mother	3.5	56.6	34.4	5.4
Husband/ Father	3.6	70.7	20.7	5.1
Teenagers	12.3	31.2	52.6	3.9
Dependents (20 and over)	8.5	46.8	34.0	10.6
Female Roommates	7.7	15.4	53.8	23.1
Male Roommates	0	58.8	23.5	17.6
Other	21.1	50.0	21.1	7.9

Note: All figures expressed as a % of the number of each household component in the total sample.

APPENDIX C - TABLE 23
MAGAZINE PURCHASING HABITS

Type of Magazine	Subscription			Casual		
	None	Some	Mean	None	Some	Mean
Women's	64.4	35.6	1.3	58.4	41.6	1.7
Business	96.5	3.5	2.3	99.6	0.4	2.0
Children's	97.8	2.2	1.2	98.9	1.1	1.0
Teenagers	95.4	4.6	1.2	94.4	5.6	1.2
Men's	96.5	3.5	1.0	86.3	13.7	1.3
Sports	92.6	7.4	1.1	90.9	9.1	1.3
Hobbies	93.9	6.1	1.2	91.3	8.7	1.3
Leisure	93.9	6.1	1.1	88.7	11.3	1.2
Travel	96.3	3.7	1.2	99.3	0.7	1.3
News	76.8	23.2	1.3	91.8	8.2	1.3
Adventure	98.5	1.5	2.0	99.1	0.9	1.0
Scientific	97.4	2.6	1.4	98.7	1.3	1.2
Automotive	94.8	5.2	1.5	95.2	4.8	2.2
Trade Magazines	87.9	12.1	1.4	98.5	1.5	2.3
Academic Journals	88.9	11.1	1.8	99.3	0.7	1.3
General Interest	65.3	34.7	1.2	89.4	10.6	1.3
Humorous	99.3	0.7	1.0	90.5	9.5	1.2
Other	87.9	12.1	1.5	94.8	5.2	2.0

APPENDIX D

RANKING TECHNIQUE

Questions 9, 20 and 33 of the field survey (see APPENDIX A.) required respondents to rank various categories. For presentation purposes the response frequencies were subjected to a simple weighting technique to obtain an overall rank for each category. If the question at hand was Question 9, for example, each category had 5 possible responses (1 to 5), the absolute frequency of response 1 was weighted by 5, the absolute frequency of response 2 was weighted by 4 and so on. Weighting factors were simple the category crder numbers in reverse. They were assigned to each response frequency in decending order. The first weighting factor corresponded to the number of categories in the question. The absolute frequency for each category was multiplied by the weighting factor and the sum of the weighted products were recorded. The process was repeated for each category and the sums of the weighted products were ranked to provide an overall rank between categories. The weighting factor for Question 20 was initialized at 10 since the question had 10 categories thus 10 possible responses for each category.

APPENDIX E

PLAUSIBLE SEGMENT GROUPS.

1. High Socioeconomic. Occupation Either Professional or Managerial, Proprietor, or Clerical or Sales, and Income Over $10,000.
2. Medium Socioeconomic. Occupation either Skilled or Technical, Semi-skilled, Student, or Retired, and Income from $7,000 to $15,000; or Occupation either Proprietor, or Clerical or Sales, and Income Less Than $10,000.
3. Low Socioeconomic. Occupation either Unskilled, Retired or Unemployed, and Income Less than $6,900.
4. Low Income. Income Under $7,000.
5. Medium Income. Income From $7,000 to $9,999.
6. High Income. Income From 10,000 to $14,999.
7. Very High Income. Income of $15,000 and Over.
8. Top Occupation. Occupation either Professional or Managerial, Proprietor, or Clerical or Sales.
9. Middle Occupation. Occupation either Skilled or Technical, Semi-skilled, Student, or Retired.
10. Bottom Occupation. Occupation either Unskilled, or Unemployed.

APPENDIX E - Continued

11. Young Household. Households with a wife or mother less than 24 years of age.
12. Middle Aged Household. Households with a wife or mother between 24 and 35 years of age.
13. Old Households. Households with a wife or mother 36 years of age of over.
14. Household #1. Small Household with only 1 wife or mother, and 1 husband or father.
15. Household #2. Household composed of a wife, a husband, and children 13 years of age and older.
16. Household #3. Household composed of a wife, a father, and teenagers over 13.
17. Household #5. Household composed of a wife, a husband, children, and teenagers.
18. Household #7. Household composed of a wife, a husband, teenagers, and dependents 20 years of age and over.
19. Household #8. Large Household with a wife, a husband, children, teenagers and dependents 20 years of age and over.
20. Population. The entire sample.

APPENDIX F

VARIABLES FOR VARIANCE ANALYSIS

1. Beef Usage Rank
2. Grccery Purchase Frequency
3. Beef Purchase Frequency
4. Bulk vs. Retail Purchases
5. Beef times/week
6. Oven Beef Roasts
7. Pot Roasts
8. Brciling Steaks
9. Chuck Steaks
10. Rcund Steak
11. Liver
12. Stew Beef
13. Corned Beef
14. Fresh Sausage
15. Ground Beef
16. Listen to music on radio
17. Listen to news on radio
18. Listen to radio for other reasons
19. Listen to radio in morning
20. Listen to radio in afternoon
21. Listen to radio in evening

APPENDIX F - Continued

22. Listen to radio in late evening
23. The days radio is listened to
24. CFRN rank
25. CEXT rank
26. Watch TV in morning
27. Watch TV in early afternoon
28. Watch TV in late afternoon
29. Watch TV in evening
30. Watch TV in late evening
31. The days on which TV is watched
32. Journal purchase frequency
33. Paper reading habits
34. Other paper index
35. Magazine index

APPENDIX G

PLAUSIBLE SEGMENT GROUP PAIRS

RUN NO.	GROUP PAIR
1.	High Socioeconomic vs. Low Socioeconomic
2.	Medium Socioeconomic vs. Low Socioeconomic
3.	High Socioeconomic vs. Medium Socioeconomic
4.	High Socioeconomic vs. Population
5.	Medium Socioeconomic vs. Population
6.	Low Sccioeconomic vs. Population
7.	Low Income vs. Medium Income
8.	Low Income vs. High Income
9.	Low Income vs. Very High Income
10.	Medium Income vs. High Income
11.	Medium Income vs. Very High Income
12.	High Income vs. Very High Income
13.	Low Income vs. Population
14.	Medium Income vs. Population
15.	High Income vs. Population
16.	Very High Income vs. Population
17.	Top Occupation vs. Bottom Occupation
18.	Top Occupation vs. Middle Occupation
19.	Top Occupation vs. Population
20.	Middle Occupation vs. Population

APPENDIX G - Continued

21. Bottom Occupation vs. Population
22. Young Household vs. Old Household
23. Middle Household vs. Old Household
24. Young Household vs. Middle Household
25. Old Household vs. Population
26. Middle Household vs. Population
27. Young Household vs. Population
28. Household #1 vs. Household #2
29. Household #1 vs. Household #3
30. Household #1 vs. Household #5
31. Household #1 vs. Household #7
32. Household #1 vs. Household #8
33. Household #1 vs. Population
34. Household #2 vs. Household #3
35. Household #2 vs. Household #5
36. Household #2 vs. Household #7
37. Household #2 vs. Household #8
38. Household #2 vs. Population
39. Household #3 vs. Population
40. Household #5 vs. Population
41. Household #7 vs. Population
42. Household #8 vs. Population

APPENDIX H

RESULTS OF VARIANCE ANALYSIS

APPENDIX H - TABLE 1
VARIABLES, GROUPS, AND SIGNIFICANT DIFFERENCES

Variable	Run Numbers
1	8 9 11 13 16 24 27
2	3 7 8 9 11 12 16 22 23 26 28 29 34 35 36 37 38
3	1 3 7 8 9 11 12 16 17 22 23 26 27 28 30 34 36 38 39
4	1 2 6 7 8 9 13 23 24 26 28 36 41
5	1 7 8 9 13 22 31
6	8 32 37 42
8	1 2 9 17 21 30 35 37
11	1 3 8 9 11 18 32
12	1 2 3 6 8 9 13 17 18 23 37
13	39
14	1 7 9 10
15	1 2 6 7 8 9 13
23	17 18
24	31 36
25	1 2 6 17 21 28 30

APPENDIX H - TABLE 1, Continued

Variable	Run Numbers
26	42
27	27 32 37 41 42
28	32 37 42
29	32 37 42
31	1 3 6 7 8 9 18 20 32 37 42
32	1 3 4 8 9 10 11 14 15 16 17 18 19 20 21 22 23 25 30 35 40
33	1 9 11 17 18 31
34	11
35	3 9 11 16 36

Note: Run Numbers correspond to the groups and testing sequence listed in Appendix G.

APPENDIX H - TABLE 2
DIFFERENCES BETWEEN GROUPS AND POPULATION

Group Tested With Population	Variables Upon Which Significant Differences Were Located					
High Sccioeconomic	+32					
Low Socioeconcmic	-4	+12	+15	-25	31	
Household #2	-2	-3				
Household #3	-3					
Household #5	+32					
Household #7	-4	17	20	21	27	
Household #8	-6	26	27	28	29	31
Young Household	-1	-3	20	27		
Middle Household	-2	-3	+4			
Old Household	+32					
Low Income	-1	-4	-5	+12	+15	
Medium Income	-32					
High Income	+32					
Very High Income	+1	+2	+3	+32	+35	
Bottom Occupation	-8	21	-25	-32		
Middle Occupation	-32					
Top Occupation	31	+32				

NOTE: Varaibles with signs indicate the direction of the differences between groups. For example, Household #2 ranks beef lower in relative consumption than does the population (variable #2 has been prefixed by a minus sign).

APPENDIX H - TABLE 3
DIFFERENCES BETWEEN GROUPS

RUN NUMBERS	VARIABLE NUMBERS					
High Socioeconomic	+3	+4	+5	+8	-11	-12
vs	-14	-15	+25	31	+32	33
Low Socioeconomic						
High Socioeconomic	+2	+3	-11	31	+32	+35
vs						
Medium Socioeconomic						
Medium Socioeconomic	+4	+8	-12	-15	+25	
vs						
Low Socioeconomic						
Low Income	-2	-3	-4	-5	+14	31
vs						
Medium Income						
Low Income	-1	-2	+3	-4	-5	-6
vs	+11	+12	+15	31	-32	
High Income						
Low Income	-1	+2	+3	-4	-5	-8
vs	+11	+12	+14	+15	31	-32
Very High Income	33	-35				
Medium Income	+14	-32				
vs						
High Income						
Medium Income	-1	+2	+3	+11	-32	33
vs						
Very High Income						
High Income	-2	-3				
vs						
Very High Income						
Top Occupation	+3	+8	-12	23	+25	+32
vs	33					
Bottom Occupation						
Top Occupation	-11	-12	31	+32	33	
vs						
Middle Occupation						

(see NOTE, APPENDIX H - TABLE 2 for explanation of signs)

APPENDIX H - TABLE 3, Continued

RUN NUMBERS	VARIABLE NUMBERS					
Young Household vs Old Household	-2	+3	+5	-32		
Middle Household vs Old Household	+2	-3	+4	-12	-32	
Young Household vs Middle Household	+1	-4				
Household #1 vs Household #2	+2	+3	-4	+25		
Household #1 vs Household #3	+2					
Household #1 vs Household #5	+3	-8	-25	-32		
Household #1 vs Household #7	-5	33				
Household #1 vs Household #8	+6	+11	27	28	29	31
Household #2 vs Household #3	-2	-3				
Household #2 vs Household #5	-2	+8	-32			
Household #2 vs Household #7	-2	-3	+4	-35		
Household #2 vs Household #8	-2	-8	-12	31		

(see NOTE, APPENDIX H - TABLE 2 for explanation of signs)